Long-Term Trash Load Reduction Plan and Assessment Strategy

Submitted by:

City of Campbell
70 N. First Street
Campbell, CA 95008

In compliance with Provisions C.10.c of Order R2-2009-0074

February 1, 2014

ACKNOWLEDGEMENTS

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CITY OF CAMPBELL
LONG-TERM TRASH LOAD REDUCTION PLAN AND ASSESSMENT STRATEGY

CERTIFICATION STATEMENT

"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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February 1, 2014

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PREFACE

This Long-Term Trash Load Reduction Plan and Assessment Strategy (Long-Term Plan) is submitted in compliance with provision C.10.c of the Municipal Regional Stormwater NPDES Permit (MRP) for Phase I communities in the San Francisco Bay (Order R2-2009-0074). The Long-Term Plan was developed using a regionally consistent outline and guidance developed by the Bay Area Stormwater Management Agencies Association (BASMAA) and reviewed by San Francisco Bay Regional Water Quality Control Board staff. The Long-Term Plan is consistent with the Long-Term Trash Load Reduction Framework developed in collaboration with Water Board staff. Its content is based on the City of Campbell's current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with Municipal Separate Storm Sewer (MS4) discharges. This Long-Term Plan is intended to be iterative and may be modified in the future based on information gained through the implementation of trash control measures. The City of Campbell therefore reserves the right to revise or amend this Long-Term Plan at its discretion. If significant revisions or amendments are made by the City, a revised Long-Term Plan will be submitted to the Water Board through the City's annual reporting process.

ABBREVIATIONS

BASMAA	Bay Area Stormwater Management Agencies Association
BID	Business Improvement District
CalRecycle	California Department of Resources Recycling and Recovery
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CDS	Continuous Deflection Separator
CEQA	California Environmental Quality Act
CY	Cubic Yards
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ERP	Enforcement Response Plan
FCD	Full [Trash] Capture Device
GIS	Geographic Information System
IDDE	Illicit Discharge Detection & Elimination Program
JPA	Joint Powers Authority
MRP	Municipal Regional Stormwater NPDES Permit
MS4	Municipal Separate Storm Sewer System
NGO	Non-Governmental Organization
NPDES	National Pollutant Discharge Elimination System
Q	Flow
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFRWQCB	San Francisco Regional Water Quality Control Board
STTP	Short Term Trash Load Reduction Plan
SWRCB	State Water Resource Control Board
TMA	Trash Management Area
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
Water Board	San Francisco Regional Water Quality Control Board
WDR	Waste Discharge Requirements
WVCWP	West Valley Clean Water Program
ZLI	Zero Litter Initiative

1.0 INTRODUCTION

1.1 Purpose of Long-Term Trash Reduction Plan

The Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit for Phase I communities in the San Francisco Bay (Order R2-2009-0074), also known as the Municipal Regional Permit (MRP), became effective on December 1, 2009. The MRP applies to 76 large, medium, and small municipalities (cities, towns, and counties) and flood control agencies in the San Francisco Bay Region, collectively referred to as Permittees. Provision C.10.c of the MRP requires Permittees to submit a *Long-Term Trash Load Reduction Plan* (Long-Term Plan) by February 1, 2014. Long-Term Plans must describe control measures that are currently being implemented, including the level of implementation, and additional control measures that will be implemented and/or increased level of implementation designed to attain a 70% trash load reduction by July 1, 2017, and 100% (i.e., "No Visual Impact") by July 1, 2022.

This Long-Term Plan is submitted by the City of Campbell in compliance with MRP provision C.10.c. Consistent with provision C.10 requirements, the goal of the Long-Term Plan is to address trash problems in receiving waters by reducing the impacts associated with trash in discharges from the City of Campbell's municipal separate storm sewer system (MS4) that are regulated by NPDES Permit requirements. The Long-Term Plan includes:

1. Descriptions of the current level of implementation of trash control measures, and the type and extent to which new or enhanced control measures will be implemented to achieve a target of 100% (i.e. "No Visual Impact") trash reduction from MS4s by July 1, 2022, with an interim milestone of 70% reduction by July 1, 2017;
2. A description of the *Trash Assessment Strategy* that will be used to assess progress towards trash reduction targets achieved as a result of control measure implementation; and,
3. Time schedules for implementing control measures and the assessment strategy.

The Long-Term Plan was developed using a regionally consistent outline and guidance developed by the Bay Area Stormwater Management Agencies Association (BASMAA) and reviewed by the San Francisco Bay Regional Water Quality Control Board (Water Board) staff. The Long-Term Plan is consistent with the Long-Term Trash Load Reduction Framework (see section 1.2.1) developed in collaboration with Water Board staff. Its content is based on the City of Campbell's current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with Municipal Separate Storm Sewer (MS4) discharges. The Long-Term Plan builds upon trash control measures implemented by the City prior to the adoption of the MRP and during the implementation of the Short-Term Trash Load Reduction Plan submitted to the Water Board on February 1, 2012.

The Long-Term Plan was reviewed and approved for submittal by the City of Campbell's Council on January 21, 2014. .

1.2 Background

1.2.1 Long-Term Trash Load Reduction Plan Framework

A workgroup of MRP Permittees, including the City of Campbell's stormwater program representative West Valley Clean Water Program (WVCWP) staff, Bay Area countywide stormwater program staff, and Water Board staff, met between October 2012 and March 2013 to better define the process for developing and implementing Long-Term Plans, methods for assessing progress toward reduction goals, and tracking and reporting requirements associated with provision C.10. Through these discussions, an eight-step framework for developing and implementing Long-Term Plans was created by the workgroup (Figure 1).

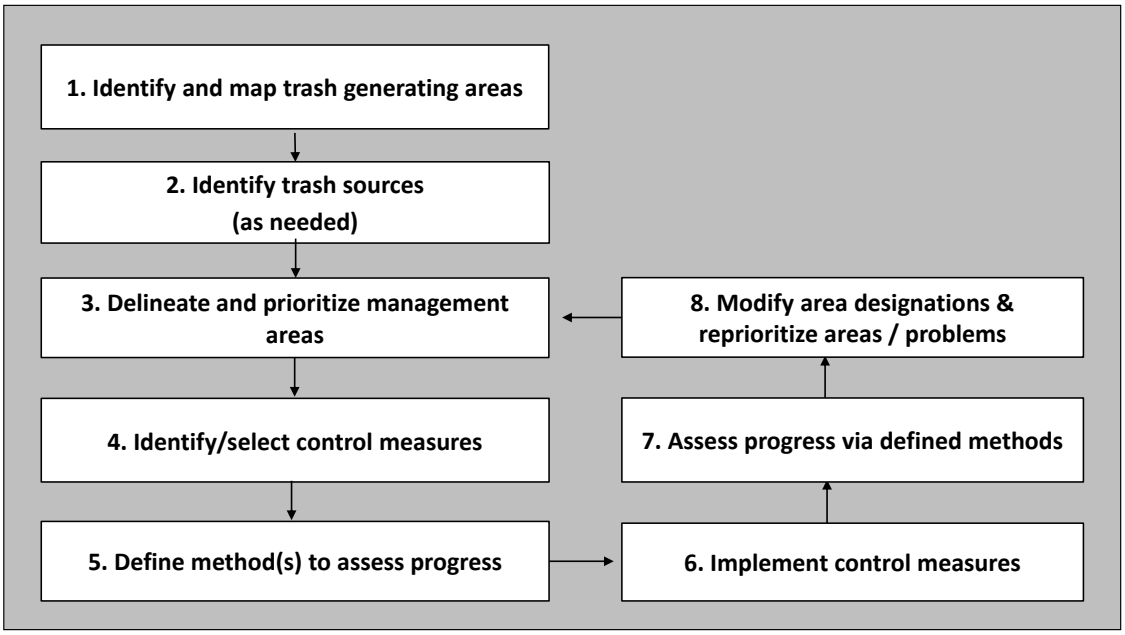

Figure 1. Eight-step framework for developing, implementing, and refining Long-Term Trash Reduction Plans.

The workgroup agreed that as the first step in the framework, Permittees would identify very high, high, moderate, and low trash generating areas in their jurisdictional areas. Trash generation rates developed through the *BASMAA Baseline Trash Generation Rates Project* (as discussed below) were used as a starting point for differentiating and delineating land areas with varying levels of trash generation. Permittees would then use local knowledge and field and/or desktop assessments to confirm or refine the level of trash generation for specific areas within their jurisdiction. Each Permittee would then develop a map depicting trash generation categories within their jurisdiction.

As a next step, Permittees would then delineate and prioritize Trash Management Areas (TMAs) where specific control measures exist or are planned for implementation. TMAs delineated by Permittees are intended to serve as reporting units in the future. Reporting at the management area level provides the level of detail necessary to demonstrate implementation and progress towards trash reduction targets.

Once control measures are selected and implemented, Permittees will evaluate progress toward trash reduction targets using outcome-based assessment methods. As the results of the

progress assessments are available, Permittees may choose to reprioritize trash management areas and associated control measures designed to improve trash reduction within their jurisdictions.

1.2.2 BASMAA Generation Rates Project

Through approval of a BASMAA regional project in 2010, Permittees agreed to work collaboratively to develop a regionally consistent method to establish trash generation rates within their jurisdictions. The project, also known as the *BASMAA Trash Generation Rates Project* (Generation Rates Project) assisted Permittees in establishing the rates of trash generation and identifying very high, high, moderate and low trash generating areas.

The term "trash generation" refers to the rate at which trash is produced or generated onto the surface of the watershed and is potentially available for transport via MS4s to receiving waters. Generation rates do not explicitly take into account existing control measures that intercept trash prior to transport. Generation rates are expressed as trash volume/acre/year and were established via the Generation Rates Project.

In contrast to trash generation, the term "trash loading" refers to the rate at which trash from MS4s enters receiving waters. Trash loading rates are also expressed as trash volume/acre/year and are equal to or less than trash generation rates because they account for the effects of control measures that intercept trash generated in an area before it is discharged to a receiving water. Trash loading rates are specific to particular areas because they are dependent upon the effectiveness of control measures implemented within an area. Figure 2 illustrates the difference between trash generation and loading.

Figure 2. Conceptual model of trash generation, interception and load.

Trash generation rates were estimated based on factors that significantly affect trash generation (i.e., land use and income). The method used to the establish trash generation rates for each Permittee builds off "lessons learned" from previous trash loading studies conducted in urban areas (Allison and Chiew 1995; Allison et al. 1998; Armitage et al. 1998; Armitage and Rooseboom 2000; Lippner et al. 2001; Armitage 2003; Kim et al. 2004; County of Los Angeles 2002, 2004a, 2004b; Armitage 2007). The method is based on a conceptual model developed as an outgrowth of these studies (BASMAA 2011b).

Trash generation rates were developed through the quantification and characterization of trash captured in Water Board-recognized full-capture treatment devices installed in the San Francisco Bay area. Trash generation rates estimated from this study are listed for each land use type in Table 1. Methods used to develop trash generation rates are more fully described in BASMAA (2011b, 2011c, and 2012).

Table 1. San Francisco Bay Area trash generation rates by land use (gallons/acre/year).

Land Use	Low[b]	Best[b]	High[b]
Commercial & Services	0.7	**6.2**	17.3
Industrial	2.8	**8.4**	17.8
Residential[a]	0.3 - 30.2	**0.5 - 87.1**	1.0 - 257.0
Retail[a]	0.7 - 109.7	**1.8 - 150.0**	4.6 - 389.1
K-12 Schools	3	**6.2**	11.5
Urban Parks	0.5	**5.0**	11.4

[a] For residential and retail land uses, trash generation rates are provided as a range that takes into account the correlation between rates and household median income.

[b] For residential and retail land uses: Low = 5% confidence interval; Best = best fit regression line between generation rates and household median income; and, High = 95% confidence interval. For all other land use categories: High = 90th percentile; Best = mean generation rate; and, Low = 10th percentile.

1.2.3 Short-Term Trash Load Reduction Plan

In February 2012, the City of Campbell submitted a Short-Term Plan that described the current level of control measure implementation and identified the type and extent to which new or enhanced control measures would be implemented to attain a 40% trash load reduction from its MS4 by July 1, 2014. Since that time, the City of Campbell has begun to implement its Short-Term Plan. Control measures implemented to date via the Short-Term Trash Reduction Plan, excluding pre-MRP control measure except where described, include:

- **Control Measure #1- Full-Capture Treatment Devices (QF-5 STTP):** Provision C.10.a.iii of the MRP required the City of Campbell to install a minimum number of full trash capture devices to treat 30% of area from commercial land use. To meet this requirement, prior to July 1, 2014, the City installed 28 devices to treat 134.08 acres of land. Additionally, four devices, including three pre-MRP devices, were installed on private property bringing the total area treated to approximately154.51 acres. Municipal owned devices receive annual inspection and cleaning prior to the rainy season with additional during-storm inspections and cleaning as needed. Privately owned devices are required to be maintained by owners and are inspected on a routine basis, as required by MRP.

- **Control Measure #2-Street Sweeping (QF-2 STTP):** Although enhanced street sweeping was not adopted as a control measure in the City of Campbell's Short-Term Plan, the City increased its street sweeping levels above its baseline levels in the downtown area from twice monthly to twice weekly in fiscal year 2012-2013. The enhanced street sweeping levels are further described in Section 3.2 as part of the City's Long-Term Plan control measures.

- **Control Measure #3- On-Land Trash Cleanups (QF-1 STTP):** As described in the Short-Term Plan, the City of Campbell continues to participate in the Great American Litter Pickup. From 2009-2013, approximately 7,400 pounds of trash that could have otherwise entered waterways directly or via the storm drain were collected by City staff led volunteers. Campbell's annual participation in this event following the MRP has resulted in yearly increases in the amount of volunteers in attendance and the level of litter outreach conducted. In addition, the City participates in other volunteer-led cleanups as requested.

- **Control Measure #4- Enhanced Storm Drain Inlet Maintenance (QF-4 STTP):** During the Short-Term Plan, the City of Campbell enhanced their storm drain O&M program from inspection and clean 50% of system (i.e. full system every two years) to annual inspections of the system with cleaning as needed by a private contractor. Records from the storm drain inlet maintenance are stored electronically by the WVCWP and Campbell, which also stores hardcopies.

- **Control Measure #5- Activities to Reduce Trash from Uncovered Loads (CR-4 STTP):** The City of Campbell's Joint Powers Authority (JPA) contract with its franchised waste hauler requires the hauler to cover loads when transporting trash and debris to the disposal site. Amendments to the 2006 hauler agreement required the hauler to switch to enclosed trucks. Additionally, the City's hauler is the exclusive roll-off and debris box provider for the City, which prohibits private haulers from working within the City. The City of Campbell adopted language specifying the requirement of covered loads in the City's contracts with private contractors (e.g. landscape contractors) as of July 30, 2012.

  The City of Campbell's municipal ordinance requires that all conveyances used to haul waste and other materials be covered and enclosed to prevent the contents from entering the public right-of-way and adjacent lands. Additionally, the City of Campbell Police Department actively enforces the CA Vehicle Code Sections 23114 and 23115, and monitors for vehicles with uncovered loads and would issue a monetary fine, as needed, to vehicles observed with uncovered loads in the City of Campbell.

- **Control Measure #6- Anti-littering and Illegal Dumping Enforcement Activities (CR-5 STTP):** The City installed pre-MRP physical barriers in the form of chain link fences and gates at an area the City identified as a hot spot for illegal dumping. This site is field checked during routine maintenance work conducted by the City's Streets and Parks Maintenance staff to deter future illegal dumping. In addition, other sites are field checked for repeat illegal dumping and any reported dumping is cleaned up the same day or within 24 business hours.

  As of December 31, 2012 the City updated its Illicit Discharge Detection and Elimination (IDDE) Enforcement Response Program (ERP) to include litter and illegal dumping as types of stormwater violations that can be met with a citation (as warranted). The IDDE reporting program allows for the City's IDDE responder to investigate complaints received regarding litter and illegal dumping in order to identify violators, in addition to ongoing surveillance by staff of illegal dump sites. Typically all illegal dumping incidents are picked up the same day or within 24 business hours.

- **Control Measure #7- Improved Trash Bins/Container Management (CR-6 STTP):** The City of Campbell's Municipal code requires all commercial and residential properties to have the minimum of once-a-week waste collection service. The municipal ordinance prohibits the

accumulation of waste on any property in the City and the hauler may require changes to service levels or container types in order to prevent the accumulation of excess waste. The City of Campbell utilizes its waste hauler to ensure all businesses and households within the City have adequate trash service (i.e., sufficient trash collection or use of bins of the appropriate size) through its JPA agreement with the hauler, which was updated with Long-Term control measures in 2013. The City's hauler regularly monitors and communicates service level changes to City staff to prevent container overflow in the downtown area from public litter containers. Service changes or additional bins are added in the downtown area based on the feedback from the hauler.

- **Control Measure #8- Creek, Channel, Shoreline Cleanups (QF-6 STTP):** City of Campbell staff service public litter containers and provide litter pickup on the Los Gatos Creek trail in Campbell two times per week. City staff field checks during routine maintenance and responds to complaints of litter or illegal dumping and cleans up problem areas the same day or within 24 business hours.

  The WVCWP coordinates the City of Campbell's annual MRP-required hot spot cleanup. Additionally, there are volunteer led cleanups on Coastal Cleanup Day and National River Day. In FY 2012-2013, a volunteer led group to restore the salmon population in the Los Gatos creek held three cleanups, including removal of homeless encampments. Additionally, the City regularly promotes volunteer led cleanups on Coastal Cleanup Day and National River Day.

- **Control Measure #9- Polystyrene Foam Food Service Ware Policies (CR-2 STTP):** In fiscal year 2012-13, the City of Campbell implemented an internal ban for City facilities and events prohibiting the purchase and distribution of polystyrene food service ware by City staff and event vendors.

- **Control Measure #10- Public Education and Outreach Programs (CR-3 STTP):** The City of Campbell participates in regional and countywide education programs through its participation in BASMAA's Regional Media Relations Project and Youth Outreach Campaign "Be the Street", SCVURPPP's Watershed Watch Campaign and ZunZun presentations. These campaigns provide anti-littering and pollution prevention messaging to the community and through school outreach programs. Locally, the City utilizes WVCWP to provide newsletter articles, press releases, web/media event notices, host events including National River Cleanup Day, Coastal Cleanup Day, and school presentation and outreach events which focus on litter reduction.

Control measures described in this Long-Term Plan build upon actions taken to-date via Campbell's Short-Term Plan. A full description of control measures implemented via short and long-term plans is included in section 3.2. Outcomes associated with short-term plan implementation will be reported in Campbell's Fiscal Year 2013-14 Annual Report, scheduled for submittal to the Water Board by September 15, 2014.

1.3 Organization of Long-Term Plan

This Long-Term Plan is organized into the following sections:

1.0 Introduction;
2.0 Scope of the Trash Problem;
3.0 Trash Management Areas and Control Measures;
4.0 Progress Assessment Strategies; and
5.0 References

Section 2.0 is intended to provide a description of the extent and magnitude of the trash problem in the City of Campbell. Control measures that will be implemented by City of Campbell as a result of this Long-Term Plan are described in section 3.0. Section 4.0 describes the methods that will be used to assess progress toward trash reduction targets.

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2.0 SCOPE OF THE TRASH PROBLEM

2.1 Permittee Characteristics

Incorporated in 1952, the City of Campbell is located in Santa Clara County, and has a jurisdictional area of 3,868 acres. According to the 2010 Census, it has a population of 39,349, with a population density of 6,685.2 people per square mile and average household size of 2.42. Of the 39,349 residents who call Campbell home, 21% are under the age of 18, 7.6% are between 18 and 24, 32.6% are between 25 and 44, 27.6% are between 45 and 64, and 11.2% are 65 or older. The median household income was $84,692 from 2008-2012. The City of Campbell is home to The Pruneyard Shopping Center, a downtown business district, a variety of retail and light Industrial businesses, and mixed residential densities.

The City of Campbell is accessed by state-owned freeways 17, 280, and 85. Campbell has a low homeless presence including homeless encampments along Los Gatos Creek that may increase as homeless populations are removed from other cities in Santa Clara County. Campbell City staff field check the city for litter issues daily during routine maintenance activities and also rely on complaints from residents and businesses to report litter and illegal dumping issues. The City has a successful response rate for cleaning up reported litter and illegal dumping issues in the same day or within 24 business hours. When possible, the violators are identified and provided anti-litter messaging by City staff.

Land uses within the City of Campbell depicted in ABAG (2005) are provided in Table 2. The City of Campbell is primary comprised of residential land use. Other land uses include commercial and services, industrial, retail, K-12 schools, and urban parks.

Table 2. Percentages of the City of Campbell's jurisdictional area[1] within land use classes identified by ABAG (2005)

Land Use Category	Jurisdictional Area (acres)	% of Jurisdictional Area
Commercial and Services	292.1	7.8%
Industrial	322.9	8.6%
Residential	2,459.3	65.7%
Retail	258.0	6.9%
K-12 Schools	154.9	4.1%
Urban Parks	115.6	3.1%
Other	138.0	3.7%

2.2 Trash Sources and Pathways

Trash in San Francisco Bay Area creeks and shorelines originates from a variety of sources and is transported to receiving waters by a number of pathways (Figure 3). Of the four source

[1] A Permittee's jurisdictional area is defined as the urban land area within a Permittee's boundary that is not subject to stormwater NPDES Permit requirements for traditional and non-traditional small MS4s (i.e. Phase II MS4s) or the California Department of Transportation, or owned and maintained by the State of California, the U.S. federal government or other municipal agency or special district (e.g., flood control district).

categories, pedestrian litter includes trash sources from high traffic areas near businesses and schools, transitional areas where food/drinks are not permitted (e.g. bus stops), and from public or private special events with high volumes of people. Trash from vehicles occurs due to littering from automobiles and uncovered loads. Inadequate waste container management includes sources such as overflowing or uncovered containers and dumpsters as well as the dispersion of household and business-related trash and recycling materials before, during, and after collection. On-land illegal dumping of trash is the final source category.

Trash is transported to receiving waters through three main pathways: 1) Stormwater Conveyances; 2) Wind; and, 3) Direct Dumping. Stormwater or urban runoff conveyance systems (e.g., MS4s) consist of curbs/gutters, and pipes and channels that discharge to urban creeks and the San Francisco Bay shorelines. Wind can also blow trash directly into creeks or the Bay. Lastly, trash in receiving waters can also originate from direct dumping into urban creeks and shorelines.

This Long-term Plan and associated trash control measures described in Section 3.0 are focused on reducing trash from one of the transport pathways illustrated in Figure 3– **stormwater conveyances**. Specifically, the Long-term Plan is focused on reducing the impacts of discharges from MS4s to San Francisco Area receiving waters and the protection of associated beneficial uses.

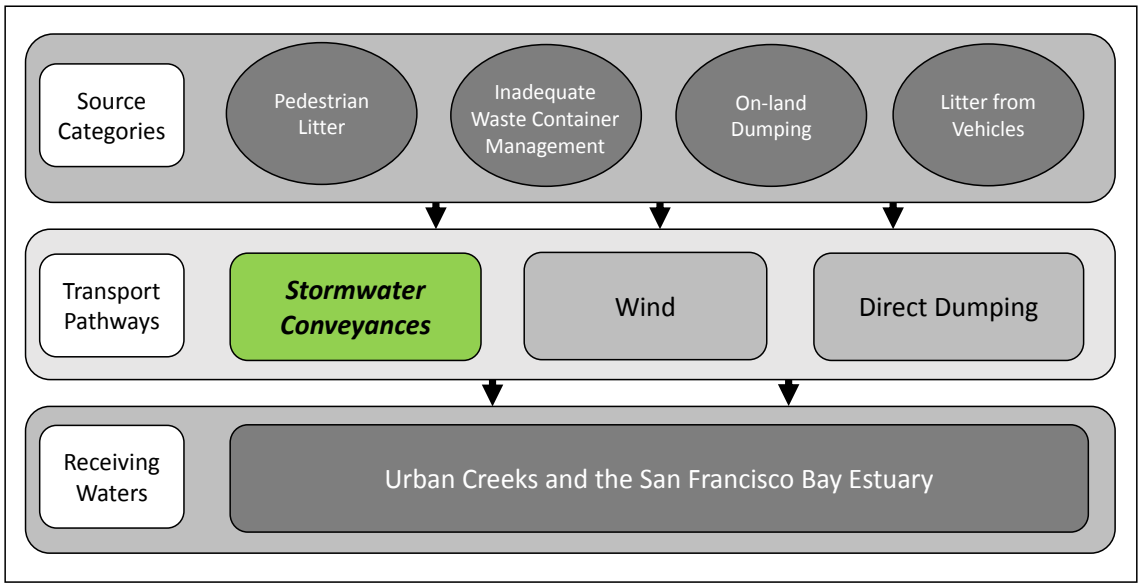

Figure 3. Trash sources categories and transport pathways to urban creeks.

Currently, the City of Campbell has a moderate homeless problem requiring the cleanup of homeless encampments at Los Gatos Creek or other illegal dumping sites. When direct, or illegal dumping sites or areas generating large volumes of litter from wind, are found by City staff or reported by the public, they are typically cleaned within 24 businesses hours.

2.3 Trash Generating Areas

2.3.1 Generation Categories and Designation of Areas

The process and methods used to identify the level of trash generation within the City of Campbell are described in this section and illustrated in Figure 4.

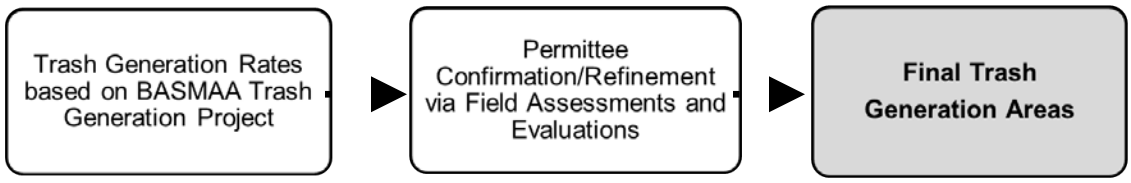

Figure 4. Trash generation area development process.

As a first step, trash generation rates developed through *the BASMAA Trash Generation Rates Project* were applied to parcels within the City of Campbell based on current land uses and 2010 household median incomes. A Draft Trash Generation Map was created as a result of this application. The draft map served as a starting point for the City of Campbell to identify trash generating levels. Levels of trash generation are depicted on the map using four trash generation rate (gallons/acre/year) categories that are symbolized by four different colors illustrated in Table 3.

Table 3. Trash generation categories and associated generation rates (gallons/acre/year).

Category	**Very High**	**High**	**Moderate**	**Low**
Generation Rate (gallons/acre/year)	**> 50**	**10-50**	**5-10**	**< 5**

The City of Campbell then reviewed and refined the draft trash generation map to ensure that trash generation categories were correctly assigned to parcels or groups of parcels. City staff refined maps using the following process:

1. Based upon our knowledge of trash generation and problem areas within the City, staff identified areas on the draft map that potentially had incorrect trash generation category designations.
2. Trash generation category designations initially assigned to areas identified in step #1 were then assessed and confirmed/refined by the City using the methods listed below.

a. On-Land Visual Assessments

To assist Permittees with developing their trash generation maps, BASMAA developed a *Draft On-land Visual Trash Assessment Protocol (Draft Protocol).* The Draft Protocol entails walking a street segment and visually observing the level of trash present on the roadway, curb and gutter, sidewalk, and other areas adjacent to the street that could potentially contribute trash to the MS4. Based on the level

of trash observed, each segment (i.e., assessment area) was placed into one of four on-land assessment condition categories that are summarized in Table 4. Teams of two (one WVCWP staff and one City staff) conducted on-land visual assessments in multiple areas to visually assess the levels of trash on the ground. For each site, a data collection form was completed and photographs were taken. Using the Draft Protocol the City assessed a total of 15 areas to assist in conducting/refining trash generating area designations.

Table 4. Definitions of on-land trash assessment condition categories.

On-land Assessment Condition Category	Summary Definition
A (Low)	Effectively no trash is observed in the assessment area.
B (Moderate)	Predominantly free of trash except for a few pieces that are easily observed.
C (High)	Trash is widely/evenly distributed and/or small accumulations are visible on the street, sidewalks, or inlets.
D (Very High)	Trash is continuously seen throughout the assessment area, with large piles and a strong impression of lack of concern for litter in the area.

b. Querying Municipal Staff

City of Campbell staff coordinated with WVCWP staff to review and update preliminary Land Use maps provided by SCVURPPP based on the City's current General Plan Land Use map and staff knowledge. The updated land use data was used to develop the draft Trash Generation Maps received on April 16, 2013. After reviewing the draft Trash Generation Maps, staff identified parcels with potentially incorrect trash generation rates.

c. Viewing Areas via Google Maps – Street View

WVCWP staff also used Google street view to view litter levels on areas in question and confirm land uses. Assessment data was transferred back to SCVURPPP to revise and update the Trash Generation Map for each jurisdiction.

3. Based on assessments conducted to confirm/refine trash generation category designations, the City created a final trash generation map that depicts the most current understanding of trash generation within the City of Campbell. The City documented this process by tracking the information collected through the assessments and subsequent refinements to the Draft Trash Generation Map. The City of Campbell's Final Trash Generation Map is included as Figure 5.

2.3.2 Summary of Trash Generating Areas and Sources

Summary statistics for land use and trash generation categories generated through the mapping and assessment process are presented in Table 5.

Table 5. Percentage of jurisdictional area within the City of Campbell assigned to each trash generation category.

Trash Generation Category	Jurisdictional Area (Acres)	Commercial and Services	Industrial	Residential	Retail	K-12 Schools	Urban Parks	Other
Very High	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
High	273.0	0.2%	12.3%	0.9%	86.6%	0.0%	0.0%	0.0%
Medium	1,132.9	25.3%	23.0%	28.4%	1.6%	11.9%	9.8%	0.0%
Low	2,334.7	0.2%	1.2%	91.5%	0.2%	0.9%	0.2%	5.9%

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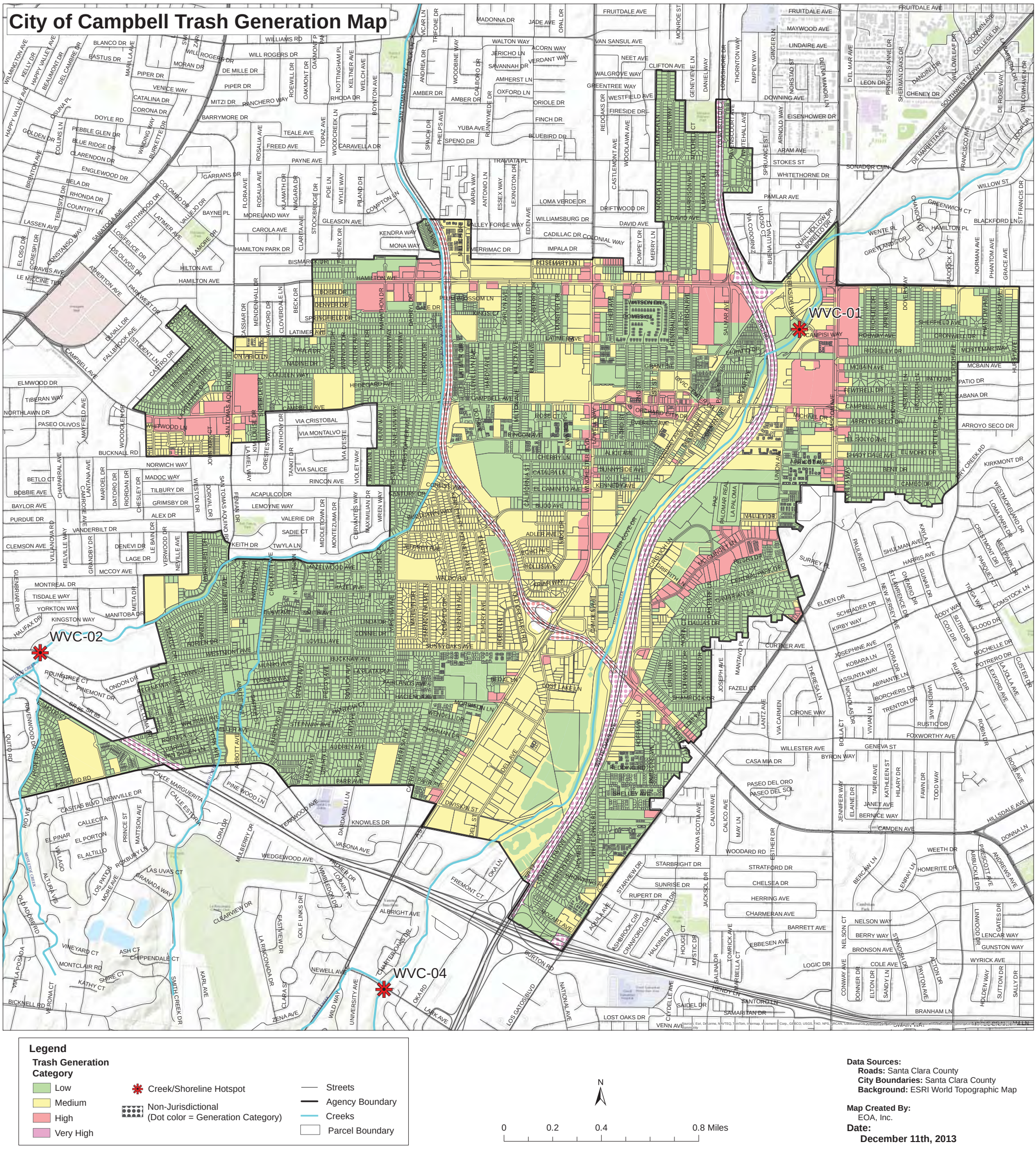

Figure 5 Final Trash Generation Map for the City of Campbell

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3.0 TRASH MANAGEMENT AREAS AND CONTROL MEASURES

This section describes the control measures that the City of Campbell has or plans to implement to solve trash problems and achieve a target of 100% trash reduction (i.e. "No Visual Impact") from their MS4 by July 1, 2022. The selection of control measures described in this section is based on the City of Campbell's current understanding of trash problems within its jurisdiction and the effectiveness of control measures designed to reduce trash impacts associated with MS4 discharges. Information on the effectiveness of some trash control measures is currently lacking and therefore in the absence of this information, the City based its selection of control measures on existing effectiveness information, their experience in implementing trash controls and knowledge of trash problems, and costs of implementation. As knowledge is gained through the implementation of these control measures, the City may choose to refine their trash control strategy described in this section. If significant revisions or amendments are made, a revised Long-Term Plan will be submitted to the Water Board through the City of Campbell's annual reporting process.

3.1 Management Area Delineation and Prioritization

Consistent with the long-term plan framework, the City of Campbell delineated and prioritized trash management areas (TMAs) based on the geographical distribution of trash generating areas, types of trash sources, and current or planned control measure locations. TMAs are intended to form the management units by which trash control measure implementation can be tracked and assessed for progress towards trash reduction targets. Once delineated, TMAs were also prioritized for control measure implementation. The City of Campbell's primary management areas were selected based on the spatial distribution of trash generating areas and the location of specific existing or planned management actions within City's jurisdiction. City staff used the following procedure to designate TMAs:

City of Campbell, along with other West Valley Permittees (Los Gatos, Monte Sereno, and Saratoga) coordinated with WVCWP staff to review their four Trash Generation Maps and develop a common guideline for determining prioritization of trash generating areas within their jurisdiction. Priority was given first to high trash generation areas and then to medium trash generation areas. Within the high and medium trash generation areas of the West Valley communities, priority was given to industrial zones with high trash generation rates. The next priority was given to high or medium trash generation areas with commercial retail area and/or downtown business districts where high pedestrian usage occurs. Next priority areas (from highest to lowest) include: arterial commercial/retail, office uses and/or light industrial, public uses (parks, schools, churches), and residential. The lowest priority was given to single-family residential areas with a low generation rate.

A map depicting the City's TMAs is included as Figure 6. All jurisdictional areas within the City are included within a TMA. The amount of jurisdictional land area and associated trash condition categories for each TMA are included in Table 6. Additionally, Table 6 shows the prioritization of control measure adoption in the TMAs for Campbell. Control measure adoption is likely to occur city-wide due to the size of the City and that the land use does not vary significantly among adjacent TMAs.

Table 6. Jurisdictional area and percentage of each Trash Management Area (TMA) comprised of trash generation categories

TMA Priority	TMA Map ID	Jurisdictional Area (Acres)	Trash Generation Rate			
			Very High	High	Medium	Low
1	C10-1	75.2	0.0%	48.6%	44.4%	7.0%
2	C05-2a	31.4	0.0%	52.4%	47.6%	0.0%
3	C01-2b	184.7	0.0%	40.1%	55.1%	4.8%
4	C02-2b	181.2	0.0%	35.5%	50.7%	13.8%
5	C03-2b	37.3	0.0%	97.6%	2.4%	0.0%
6	C04-2b	108.0	0.0%	24.1%	71.3%	4.6%
7	C11-2b	28.2	0.0%	32.8%	67.2%	0.0%
8	C09-2c	214.9	0.0%	2.3%	96.1%	1.6%
9	C06-2c	45.3	0.0%	4.2%	88.9%	6.9%
10	C08-4	181.8	0.0%	0.0%	98.8%	1.2%
11	C07-4	109.7	0.0%	0.0%	75.9%	24.1%
12	C12-4	2,543.1	0.0%	0.1%	11.2%	88.7%

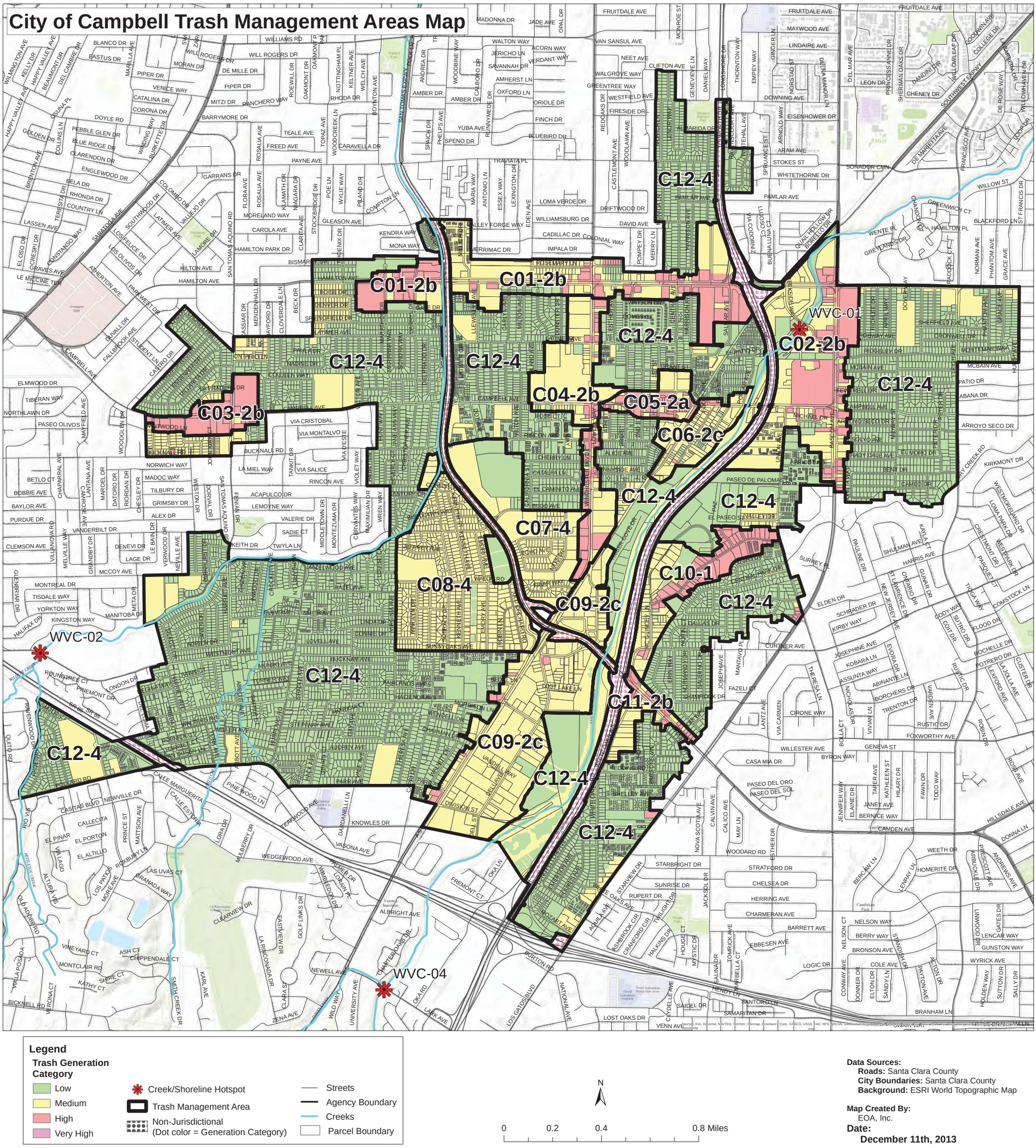

Figure 6 Trash Management Area Map for the City of Campbell

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3.2 Current and Planned Trash Control Measures

The City of Campbell has actively worked to provide maintenance service to its constituents, as well as regulate litter and illegal dumping to maintain a pristine and functional City so that its streets and other land uses do not have a negative impact on local waterways and the San Francisco Bay. Prior to the MRP the City had control measures or best management practices and standard operating procedures in place to maintain a clean city. Through the Short-Term and Long-Term Plans the City is seeking to enhance existing control measures and develop new control measures for improved data collection, reporting, assessments, and cleanups. When funding and other City resources, such as grants and staff time are available, the City will work to evaluate the best opportunities to prevent (i.e. source control) and cleanup litter through the duration of this Long-Term Plan from 2014 to 2022.

The combination of jurisdictional-wide and TMA specific control measures described below are expected to achieve litter reductions within the TMAs to reduce moderate and high generating areas to low generating areas. Jurisdictional-wide programs may be selected for isolated enhancement in TMAs when needed. For example, a single TMA may receive enhanced street sweeping over an adjacent TMA. However, it is likely that most control measures will be implemented city-wide or in multiple TMAs. Therefore, jurisdictional-wide control measures are prioritized along with potential control measures specific to TMAs beginning in Section 3.2.2.

The proposed adoption and timeline for implementation of all control measures planned will be dependent on available City funds and program resources (including staff and equipment). Additionally, control measure selection will be dependent on the results of the *Trash Assessment Strategy* described in Section 4.0 in determining the best control measures to achieve full trash capture equivalency.

3.2.1 Jurisdiction-wide Control Measures

The City of Campbell will continue to provide ongoing visual observations during routine maintenance that occurs on a daily or weekly basis throughout the City to identify new or existing litter problem areas that need enhanced control measures. Primarily targeting moderate and high generation areas, the City will adopt control measures city-wide as needed to address commercial and industrial land uses generating litter while providing outreach to the city residents and businesses.

Jurisdictional-wide control measures include city-wide outreach programs and product bans, as well as, control measures that will be evaluated for which TMA is best for having the control measure implemented based on the trash generation level of the TMA over time.

Full-Capture Treatment Devices

Pre-MRP Actions (Prior to 2009)

Prior to 2009 three full-capture devices (FCDs) were installed on private property in the City of Campbell in a commercial/industrial area, retail area, and high density residential area.

Post-MRP Actions (December 2009-July 1, 2014)

As required by the Short-Term Plan, FCDs to treat 30% of commercial land use were installed by July 1, 2014. Twenty-eight devices were installed throughout the city in TMAs

C01-2, C02-2, C03-2, C05-2, C10-1, and C12-4 as shown in Figure 7. All 28 devices are Advanced Solution's AS-1 (ST3G) small devices that fit inside the catch basins. This type of device was selected based on demonstrations and feedback from observations of units that were being used by other municipalities in Santa Clara County. Another important feature of these units is their ability to be removed and replaced for cleaning and maintenance activities, with minimal effort. Maintenance will include annual cleaning prior to rainy season and cleaning before a major rain event, plus checks for signs of flooding during "wet season" and cleaned as necessary to remove debris. Campbell's contractor provides annual cleaning and submits both electronic and hard copies to Campbell's Streets Department for recordkeeping. Also, Campbell's Streets Department conducts pre-storm assessments and during-storm checks and keeps data in the Streets Department. No maintenance issues had been reported as of the 2012-2013 Annual Report.

Planned Actions (July 2014-July 2022)

The City will evaluate its fiscal budget annually to install new FCDs throughout the City in addition to the 28 devices existing. Due to the capital expense and ongoing maintenance requirements and costs, FCDs will be evaluated as the last control measure selected compared to other jurisdictional-wide and TMA specific control measures that can provide FCD equivalent treatment. FCD equivalency will be based on the assessment strategy study described in Section 4.0. Based on the results of the study and provided no fiscal complications are identified to prohibit the administration of capital improvement funds, a new FCD will be planned for installation in TMAs not meeting 70% and 100% trash load reduction through other control measures. TMAs with high trash generations rates such as C10-1 (industrial land use) and C05-2a (the downtown) are likely to be prioritized for additional FCDs. The City will plan to install Advanced Solution AS-1 (ST3G) (connector pipe screens), which is the same type of device installed at the four existing FCD locations that were required as part of the 2009 MRP. Device type may be adjusted as new and improved Water Board approved devices become available or if repair costs and maintenance needs for the existing device type are found to be too burdensome. Following installation of the device, maintenance will be performed annually prior to the first major rain event with additional maintenance as needed. As of February 1, 2014 the City's storm drain inlet maintenance contractor performs inspections and maintenance annually, with support from the City's maintenance staff. If any changes are made to this contract (i.e. the City takes on all inlet cleaning), all FCDs will continue to be inspected at a minimum of once annually.

Street Sweeping

Pre-MRP Actions (Prior to 2009)

The City of Campbell's pre-MRP street sweeping program included sweeping streets in most residential areas once per month, and most arterial roads and the downtown area twice per month. Parking enforcement signs for street sweeping are not posted in the City. However, parking enforcement equivalent exists on some arterial roads in the form of limited available street parking and no presence of after-hours parking outside of businesses allowing for curb access by the street sweeper.

Additionally, municipal staff sweeps the parking lots of city facilities, such as the Community Services Center, one time per week.

Post-MRP Actions (December 2009-July 1, 2014)

In fiscal year 2012-2013, street sweeping enhanced to twice weekly street sweeping in Campbell's downtown commercial/retail area (TMA C05-2a), once weekly in commercial areas, and twice monthly in residential areas.

Planned Actions (July 2014-July 2022)

Each fiscal year from 2014-2022, the City of Campbell will evaluate its street sweeping program to determine if problem areas exist in TMAs that need enhanced street sweeping above the fiscal year 2013-2014 frequencies. Additionally, increased street sweeping will be prioritized over the installation of new FCDs in the City of Campbell as less capital funds are required. Changes to the street sweeping frequencies will be based on available funding and street sweeping contract set up. For example, as of February 1, 2014 the City has a private contractor for all street sweeping; however, the City may change its program to street sweeping by municipal staff or the City's franchised solid waste hauler in the future. Additionally, the City will consider the implementation of additional red curbs and signage to further deter street parking and improve access to the curb with a pilot program starting in fiscal year 2013-2014.

On-Land Trash Cleanups

Pre-MRP Actions (Prior to 2009)

Prior to 2009 it is part of the City of Campbell's Performance Standard for Public Streets, Roads and Highways Operation and Maintenance to provide litter control in these areas with the exception of Highways 17 and 85, which are maintained by CalTrans, and San Tomas Expressway, which is maintained by the Santa Clara County Roads and Airports Department.

Best Management Practices (BMPs) for litter control include:

- Post "No Littering" signs where needed and enforce anti-littering laws.
- Provide trash receptacles as necessary in commercial areas, common public gathering areas (such as trails, parks, pedestrian ways, public trailheads and downtown)
- Empty public trash receptacles on an appropriate frequency to prevent spillage.
- Integrate an anti-littering message into municipal public education efforts and media outlets.

City staff regularly field checks during routine maintenance for problem litter areas and provides clean-up and physical barriers to deter litter or illegal dumping, when necessary. City maintained medians in the downtown area cleaned once per week. All other medians are checked on a rotating basis for landscaping needs and litter pickup city-wide, approximately one time per week. City staff also maintains the roadside right-of-ways on a complaint basis. City maintenance staff also hand sweep the parking stalls and corners that cannot be accessed by the street sweeper in the downtown area (TMA C05-2a) of Campbell two times per week. City staff follows an aggressive protocol to cleanup all discovered or reported illegal dumping or high volume litter areas within a few hours or at most within 24 business hours. All complaints are recorded by the Public Works Department.

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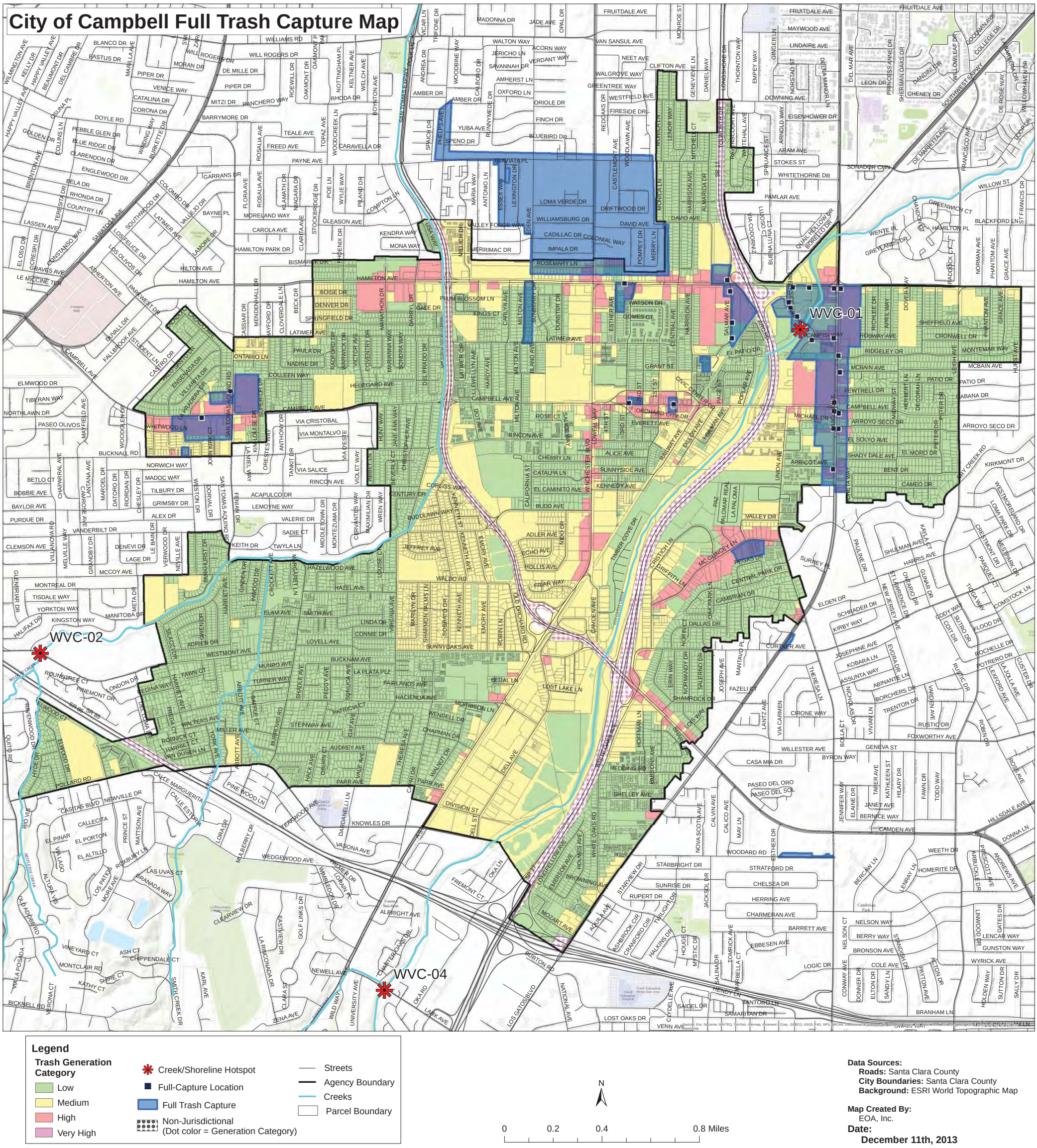

Figure 7 Trash Full Capture Device Map for the City of Campbell

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Additionally, the City coordinates volunteers and participates annually in the Great American Litter Pickup as well as other volunteer cleanups throughout the year, as volunteer request arise. The City has participated in the Great American Litter Pickup since 2003. Campbell's annual participation in this event following the MRP has resulted in yearly increases in the amount of volunteers in attendance and the level of litter outreach conducted.

Planned Actions (July 2014-July 2022)

The City will continue to maintain medians and right-of-ways at pre-MRP levels with regular field checks during weekly routine maintenance to identify persistent problem areas. If new litter problem areas are identified, the City will consider implementing anti-littering or dumping signage or physical barriers. Also, field check frequencies may be increased as needed.

Beginning in March 2014 with the implementation of the City's new solid waste franchise agreement, Campbell will rely on its hauler to annually provide outreach through media such as newsletters, flyers, door hangers, notification tags, and direct contact to businesses and residents, including multi-family complexes. Outreach messaging must be approved by the West Valley Solid Waste Management Authority and will plan to include information on source reduction and anti-littering. The hauler will also provide outreach to schools through programs including presentations and contests that will include anti-littering messaging.

Additionally, through its role as a SCVURPPP Co-Permittee, Campbell will assist in developing partnerships with transportation agencies such as Caltrans. Highways, such as 17 and 85, and on/off-ramps contribute large litter volumes to the City's TMAs and waterways. However, the City does not have jurisdiction over, or permission, to access these roadways for litter cleanup or the implementation of other control measures such as physical barriers or trash capture devices. Therefore, SCVURPPP began conversations with CalTrans in 2013 that Campbell will continue to participate in through the life of the Long-Term Plan in order to reduce the very high or high trash generation rates in these areas through Caltrans or City implemented control measures.

Partial-Capture Treatment Devices

Planned Actions (July 2014-July 2022)

As of February 1, 2014, the City has no partial-capture devices; however, the City will consider the installation of partial-capture devices beginning in 2015 subject to available funding. Curb inlet bar screens or new technologies will be considered, especially if new FCDs or other equivalent control measures are not deemed feasible and dependent on available City funds.

Additionally, in 2015 the City of Campbell will consider including in its Event Use Permits, language that requires the installation of temporary storm drain covers (e.g. berms) during any event on City property or right-of-ways that will be installed and maintained during events by City maintenance staff. Temporary covers will allow for protection of the storm drain during events that have a high probability of generating litter while not requiring for more permanent devices that are more costly and require on-

going maintenance. Event Use Permits will target the downtown area (TMA C05-2a) and possibly other areas where events may be held such as parks.

Enhanced Storm Drain Inlet Maintenance

Pre-MRP Actions (Prior to 2009)

Prior to the MRP, storm drain inlet maintenance occurred biennially where storm drains were on a rotating basis to be cleaned every other year by a private contractor. Additional support during the wet season is provided by City maintenance staff.

Post-MRP Actions (December 2009-July 1, 2014)

As described in the Short-Term Plan, storm drain system maintenance was enhanced from pre-MRP levels (biennially) to all main storm drains and outfalls being inspected annually and cleaned as needed as of July 1, 2012. A total of 1,148 storm drain inlets are maintained as part of the City's larger storm drain system by the City's contractor with additional support from City maintenance staff (i.e. prior to or during rain events).

Planned Actions (July 2014-July 2022)

As needed, the City will enhance the frequency of cleanups if problem inlets or devices are identified that need a higher level of maintenance via its existing contract or the allocation of additional City maintenance staff time. Annual inspections will allow for the reporting and identification of problem inlets through the City's record-keeping system that receives annual reports from the contractor. By December 2014, the City will develop a more comprehensive tracking system for storm drain inlet maintenance to assist in tracking problem areas and more targeted cleanups.

Activities to Reduce Trash from Uncovered Loads

Pre-MRP Actions (Prior to 2009)

The City of Campbell's Joint Powers Authority (JPA) contract with its franchised waste hauler requires the hauler to cover loads when transporting trash and debris to the disposal site. Amendments to the 2006 hauler agreement required the hauler to switch to enclosed trucks. . Additionally, the City's hauler is the exclusive roll-off and debris box provider for the City, which prevents private haulers that may not be regulated to have covered loads from entering the City. The City of Campbell's municipal ordinance requires that all conveyances used to haul waste and other materials be covered and enclosed to prevent the contents from entering the public right-of-way and adjacent lands.

Post-MRP Actions (December 2009-July 1, 2014)

As of July 30, 2012, the City of Campbell adopted language specifying the requirement of covered loads in the City's contracts with private contractors (e.g. landscape contractors) as well as the standard operating procedures for City staff.

Planned Actions (July 2014-July 2022)

The City's new solid waste franchise agreement to be implemented March 2014 will continue to require covered loads for hauler trucks and debris boxes. Vehicles are subject to inspection by the JPA and must be cleaned and maintained to prevent the spread of litter.

The City will continue to rely on the Police Department to enforce CA Vehicle Code Sections 23114 and 23115 that prohibit uncovered loads and issue monetary fines, as needed. Campbell may consider the enhancement of uncovered load enforcement to include adopting fix-it tickets for uncovered loads in 2014-2015. Fix-it tickets will be provided by the Police Department or Code Enforcement and require that upon payment of the fines for uncovered loads, violators will receive a tarp. Tarps could be distributed at the City's Corp Yard or other central location.

Anti-littering and Illegal Dumping Enforcement

Pre-MRP Actions (Prior to 2009)

The City of Campbell's Streets and Parks staff has an informal program in place to respond to complaints from the public regarding illegal dumping. If illegal dumping sites are found in response to complaints, staff picks up the materials and provides outreach to the violator (if identifiable) but there was no enforcement prior to the MRP.

Post-MRP Actions (December 2009-July 1, 2014)

As required by the City's Short-Term Plan existing physical barriers and previously identified problem litter sites will be field checked for on-going litter issues and illegal dumping. As of December 31, 2012 the City updated its Illicit Discharge Detection and Elimination (IDDE) Enforcement Response Program (ERP) to include litter and illegal dumping as types of stormwater violations that can be met with a citation (as warranted). The IDDE reporting program allows for the City's IDDE responder to investigate complaints received regarding litter and illegal dumping in order to identify violators, in addition to ongoing surveillance by staff of illegal dump sites. Typically all illegal dumping incidents are picked up the same day or within 24 business hours.

Planned Actions (July 2014-July 2022)

The City may enhance field checks of potential problem sites by increasing City maintenance staff time for field checking and reporting issues. Beginning in 2014, the City will increase staff time devoted to creek cleanups, particularly related to homeless encampment cleanup. Also, the City will work more closely with the Santa Clara Valley Water District to report and cleanup problem areas on an annual basis through 2022.

Improved Trash Bins/Container Management

Pre-MRP Actions (Prior to 2009)

Prior to the MRP, control measures included in the 2006 hauler agreement were the change to carts with lids, including the switch from three open bins for residential

recycling to a mixed recyclables, closed-lid cart. In addition, collection containers have to be issued by the hauler, therefore not allowing waste generators to place private containers (e.g. inadequately sized or open top containers) out for collection by the hauler. The City of Campbell utilizes its waste hauler to ensure all businesses and households within the City have adequate trash service (i.e., sufficient trash collection or use of bins of the appropriate size) through its JPA agreement with the hauler. The City's hauler regularly monitors and communicates service level changes to City staff to prevent container overflow in the downtown area. A map of the downtown containers and service level is regularly updated by the hauler and provided to the City.
The City's municipal code requires all commercial and residential properties to have the minimum of once-a-week waste collection service. The municipal ordinance prohibits the accumulation of waste on any property in the City and the hauler may require changes to service levels or container types in order to prevent the accumulation of excess waste.

Post-MRP Actions (December 2009-July 1, 2014)

In fiscal years 2012-2013 and 2013-2014 Campbell, along with the other West Valley cities, worked to incorporate stormwater language for litter prevention into its new solid waste franchise agreement, to be adopted in FY 13-14. Proposed contract language included hauler provided: anti-litter outreach, litter cleanup, street sweeping, improved collection technology to prevent litter, public litter containers and service, and illegal dumping collection.

In addition, since 2010 (not reported in Short-Term Plan), the City's contract stormwater inspectors (from Santa Clara County Department of Environmental Health and the Santa Clara County Fire Department) have included stormwater violations, such as unkempt enclosure areas, in their annual business checklist. Any stormwater violations are reported back to the WVCWP for follow up and record keeping and to the City for enforcement.

Planned Actions (July 2014-July 2022)

In 2014-2015, the City may consider adopting Planning requirements for new businesses which may require businesses to provide and service public litter containers in addition to providing litter cleanup of the business property. Provisions for public litter containers may be incorporated into the City's business permitting process and may include language on the recommended container types, quantity depending on property size, and service levels. The City may hold all business licenses until these requirements are met. Additionally, businesses may be subject to enforcement, including monetary fines, if these requirements are not followed.

Through its participation in the Santa Clara County Zero Litter Initiative (ZLI) as a WVCWP member, Campbell is working with this committee to develop a right-size/right-service regional campaign to prevent litter generated in the waste collection process. In fiscal year 2012-2013, the WVCWP program, on behalf of the West Valley agencies, participated in a series of workshops with solid waste haulers, municipalities, and other stakeholders to develop solutions to preventing litter during waste collection. This work will continue into fiscal year 2013-2014 and possibly beyond to develop model ordinance and solid waste contract language as well as outreach materials for the best practices for ensuring residential and business collection carts and bins are properly sized with an adequate collection frequency.

Single-Use Carryout Plastic Bag Policies

Post-MRP Actions (December 2009-July 1, 2014)

The City of Campbell representatives met with the other West Valley communities through its Joint Powers Authority (JPA) solid waste agreement on February 2, 2012. The JPA voted unanimously to move forward with a single use plastic bag ban and recommended that each of the West Valley municipalities enact the ban. In fiscal year 2011-2012 Campbell participated in the San Mateo County Environmental Impact Report (EIR) and ordinance development. Campbell held public meetings, study sessions, and provided outreach for residents and businesses while the ban was being proposed.

Planned Actions (July 2014-July 2022)

Campbell adopted a single-use plastic bag ban using the San Mateo County model ordinance in July 2013 that becomes effective January 27, 2014. The ordinance will prohibit the distribution of plastic bags and require a 10 cent charge for paper or reusable bags (will increase to 25 cents as of January 1, 2015). The ban will apply to commercial businesses that sell perishable or nonperishable goods (i.e. food and clothing), excluding restaurants and nonprofit charitable reuse organizations. Following City Council Study Sessions, staff hosted informational meetings with merchants, residents, service clubs , Chamber of Commerce and Downtown Business Association to enlist community support prior to City Council adoption of Reusable Bag Ordinance

Polystyrene Foam Food Service Ware Policies

Post-MRP Actions (December 2009-July 1, 2014)

As required by its Short-Term Plan, the City adopted an internal polystyrene foam food service ware ban for City facilities and events in fiscal year 2012-2013. As of February 1, 2014, no violations involving the purchase or use of polystyrene foam were observed at City facilities or events.

Planned Actions (July 2014-July 2022)

In 2014 the City will consider implementing a city-wide ban on polystyrene foam food service ware at food service establishments (i.e. sit-down restaurants and fast food or single-serve to-go places). Implementing a ban will be dependent on available funding for an EIR, if required, and staff time to develop an ordinance and outreach campaign. In addition, the City would evaluate the progress of other West Valley and Santa Clara County cities in implementing a polystyrene foam foodware ban. Outreach for a ban would require a door-to-door educational campaign for businesses including information on impacts to businesses and acceptable alternatives to polystyrene containers.

The decision to move forward with a polystyrene ban will be dependent on available funds for outreach and enforcement, and whether or not it is needed to achieve 70% or 100% trash load reductions based on the status of other control measures planned in this Long-Term Plan. Additionally, a polystyrene ban will be evaluated based on its

ability to contribute to full trash capture equivalency to be determined as part of the assessment strategy studies described in Section 4.0.

Public Education and Outreach Programs

The City of Campbell participates in the BASMAA and SCVURPPP outreach programs described below in addition to participation in the Santa Clara County Zero Litter Initiative (ZLI) Committee since 2008 and will continue to participate through the duration of the Long-Term Plan. The ZLI serves Santa Clara County to focus on litter reduction programs and outreach messaging related to trash sources and pathways such as homeless encampments and vehicle litter. Beginning in 2010, the ZLI developed a subgroup to focus on litter generation from the waste collection process from point of collection to delivery to a solid waste facility. The WVCWP represents the City at monthly meetings and hosted one of two round table workshops in the City of Campbell. The round table workshops in fiscal year 2012-2013 brought together solid waste haulers, municipalities, non-governmental organizations, and other interested parties to discuss and develop solutions to the litter problem from solid waste collection. The ZLI has performed a survey of Santa Clara County cities on existing enforcement and outreach programs to deter litter generation and will look to develop model ordinances and a county-wide outreach program beginning in 2014. The ZLI work is expected to continue through 2022 and will address other litter sources overtime such as litter generation from self-haul vehicles and state freeways.

Post-MRP Actions (December 2009-July 1, 2014)

The City of Campbell participates in regional and countywide education programs through meeting attendance and providing feedback on outreach material development for BASMAA and SCVURPPP outreach programs such as the Watershed Watch Campaign, ZunZun, the BASMAA Regional Media Relations Project, and the BASMAA Youth Outreach Campaign. These campaigns provide anti-littering and pollution prevention messaging to the community and through school outreach programs. Additionally, the WVCWP attends meetings on the City of Campbell's behalf and hosts events including National River Cleanup Day, Coastal Cleanup Day, and school outreach events that have an emphasized focus on litter reduction messaging.

Planned Actions (July 2014-July 2022)

The City will continue to contribute funding and collaborative input to regionally developed BASMAA outreach materials as described in the Short-Term Plan. Additionally, the City expects that new BASMAA outreach materials will be developed during the length of the Long-Term Plan that it will contribute to through its participation through the WVCWP in regional meetings and the distribution of new outreach materials or campaigns.

Starting in 2014-2015, the City may perform litter assessments contiguous to school grounds, which may include public and private elementary, middle, and high schools located in the City (prioritized in moderate or high trash generating areas, as applicable). Assessments contiguous to school properties will identify if a litter problem from campus grounds is migrating to the street and MS4's. Although the City does not have jurisdiction over schools, if campuses are identified as having persistent incidents of litter that may enter the MS4, outreach may be performed to the schools. Depending on the level and sources of litter identified on campuses, outreach may be performed to school

staff and/or students. For example, if litter is isolated to waste enclosure areas that are only accessed by staff, outreach on proper enclosure maintenance may be performed to custodial staff. Alternatively, if litter is the result of student behavior the City may outreach to lead school staff (i.e. the principal or a teacher) to educate students. The City may provide anti-litter educational materials such as posters and trainings for students as needed.

The City may update its website to promote anti-littering messaging in fiscal year 2014 /2015. Messaging will be updated as needed and may include information on litter volunteer cleanup events, proper waste container management to prevent overflow, adopt-a-creek programs, impacts of litter on the environment, the City's promotion of reusable bags and food service ware, information on City or hauler waste collection services or events to deter illegal dumping and provide street sweeping and litter enforcement. The City will consider advertising a City phone number, or hotline number, on this portion of the website for residents and business to report litter or illegal dumping violations. Currently, the City is very responsive in addressing illegal dumping issues whether they are complaint driven or observed by municipal staff as incidents are cleaned up in the same day or within 24 business hours. City staff typically find it is difficult to identify the responsible party for an illegal dumping violation but do perform outreach when a violator is identified. The provision of a dedicated phone number for litter related complaints will allow for tracking and record-keeping of the number of incidents over time. Incidents will be documented via a WVCWP or City developed form and filed electronically for tracking.

3.2.2 Trash Management Area: Priority #1: (Map ID, C10-1)

TMA C10-1 is an industrial/commercial land use area confirmed to have high generation rates based on field observations by WVCWP and City staff. Current control measures, such as FCDs, enhanced inlet cleaning, and street sweeping, will be evaluated and enhanced as needed to address high litter levels in addition to new control measures. Additionally, this TMA may be addressed by the jurisdictional-wide control measures described in Section 3.2.1.

Pre-MRP Actions (Prior to 2009)

In 2007, a private FCD was installed in the industrial/commercial land use area of C10-1. This device is a hydrodynamic separator treating 4.64 acres on private property. Privately owned devices are required to be maintained by owners and are inspected on a routine basis, as required by the MRP. Any future development in this area may encourage additional private devices to be installed through the City's Building Department.

Planned Actions (July 2014-July 2022)

Due to the prioritization of this TMA as having a high trash generation rate in a commercial/industrial land use area, the City may evaluate the installation of additional FCDs in TMA C10-1 in fiscal year 2015-2016 depending on the performance of equivalent control measures adopted and available funding as described in Section 3.2.1. Other enhancements in this TMA may include enhanced street sweeping from two times per month to three times per month, or weekly, and enhanced storm drain inlet cleaning to increased monitoring and possibly twice annual cleaning. These enhancements will be evaluated in fiscal year 2014-2015.

3.2.3 Trash Management Area: Priority #2: (Map ID, C05-2a)

TMA C05-2a is the downtown area of Campbell, primarily composed of retail shops and food establishments. Take-away food restaurants and cafes are a likely litter source as single-serve foodware is a commonly found littered item in this area. Current control measures will be evaluated and enhanced as needed to address high litter levels in addition to new control measures. Additionally, this TMA may be addressed by the jurisdictional-wide control measures described in Section 3.2.1.

Pre-MRP Actions (Prior to 2009)

The downtown area has a robust on-going maintenance program complete with landscaping and litter cleanup, including weekly median maintenance and twice weekly hand sweeping of corners and parking stalls that cannot be accessed by the street sweeper. The solid waste hauler provides monitoring of public containers for overflow and reports problem containers or areas to the City for improved bin management, including the provision of more containers.

Post-MRP Actions (December 2009-July 1, 2014)

The downtown area had two FCDs installed prior to July 1, 2014. As described in Section 3.2.1. FCDs are maintained annually with increased monitoring as needed during the wet season.

Planned Actions (July 2014-July 2022)

Depending on fiscal funding, the results of the *Trash Assessment Strategy,* and other potential barriers such as contract negotiations, street sweeping and inlet maintenance will be evaluated for enhancements in fiscal year 2014-2015. Street sweeping in the downtown area already occurs twice weekly, however, three times weekly sweeping may be considered. Other enhancements to street sweeping such as “no parking” signs and red curbs may also be evaluated for implementation beginning in fiscal year 2015-2016. Enhanced monitoring and cleaning of storm drain inlets to twice annually may also be considered.

The City will also continue its downtown program to provide an adequate number of public litter containers based on hauler feedback and may increase the number of containers annually, as needed, and as funding permits. Control measures such as product bans (i.e. single-use bags and polystyrene food service ware) and public outreach described under the jurisdictional-wide control measures will greatly benefit the downtown area in reducing trash generation rates to lower levels. Additional FCDs will be considered in the downtown area based on the performance of other control measures adopted and available funding, beginning in 2017.

3.2.4 Trash Management Areas: Priority #3 (Map ID, C01-2b)
Priority #4 (Map ID, C02-2b)
Priority #5 (Map ID, C03-2b)
Priority #6 (Map ID, C04-2b)

TMAs C01-2b, C02-2b, C03-2b, and C04-2b are close in proximity and contain similar land uses therefore they are likely to receive the same, or similar, control measure enhancements. These TMAs contain arterial roads in Campbell with a mix of shopping centers and other retail as well as service and food establishments that can be major trash sources. These TMAs will be

addressed by the jurisdictional-wide control measures as well as the TMA specific control measures below.

Post-MRP Actions (December 2009-July 1, 2014)

Prior to July 1, 2014, TMA C01-2b had four FCDs installed, TMA C02-2b had 19 devices installed, TMA C03-2b had two devices installed, and TMA C04-2b had one device installed. Devices are maintained annually with increased monitoring during the wet season.

Planned Actions (July 2014-July 2022)

Enhanced street sweeping from once monthly to twice monthly or weekly street sweeping in these three TMAs may be considered as the most cost-effective use of City resources. Street sweeping will be evaluated based on the ability to negotiate the contract with the private contract (unless the City takes on the street sweeping program) and available fiscal funds. Enhanced street sweeping in these TMAs may also be supplemented with "no parking" signs, increased enforcement (i.e. citations), and red curbs to improve access to the curb by the street sweepers. Street sweeping enhancements will be considered beginning in fiscal year 2014-2015.

Areas surrounding food service establishments, particularly those that offer single-serve food ware such as cafes, fast-food establishments, and convenient stores will be evaluated beginning in fiscal year 2015-2016 by City staff for the need for public litter containers. If litter problem areas are identified where a public litter container can be placed (e.g. a sidewalk or storefront) the City will install and service the container based on available funding to purchase containers. Additionally, the City may consider requiring businesses to install and service public containers as part of the business license permitting process. As part of the business permitting process to require public litter containers, the City may also require businesses to clean up litter surrounding the container, storefront, and parking lot of the business.

Additional FCDs may be installed if funding is available and if other control measures selected for these TMAs do not demonstrate FCD equivalency overtime. Additional FCDs will be evaluated annually through 2022 to meet the 70% and 100% trash load reduction requirements.

3.2.5 Trash Management Area: Priority #7 (Map ID, C11-2b)
Priority #8 (Map ID, C09-2c)
Priority #9 (Map ID, C06-2c)

TMAs C11-2b, C09-2c, and C06-2c are close in proximity and contain similar land uses therefore they are likely to receive the same, or similar, control measure enhancements. These TMAs contain arterial roads in Campbell with retail, commercial, and light industrial uses that have primarily moderate trash generation levels.

Planned Actions (July 2014-July 2022)

In addition to the jurisdictional-wide control measures, these TMAs may be eligible for enhanced street sweeping from once monthly to twice monthly, or possibly weekly. Street sweeping enhancements including improved access to the curb via "no parking" signs and red curbs will be evaluated in fiscal year 2017-2018.

Based on monitoring on the area, funding, and the success of jurisdictional-wide control measures in reducing litter in these TMAs, storm drain inlet maintenance may be enhanced to increase monitoring of litter problem areas and drains and increased maintenance to twice annually beginning in fiscal year 2017-2018. In retail and industrial areas with pedestrian access the City may provide or require businesses to provide public containers as well as litter cleanup surrounding the container and business beginning in fiscal year 2017-2018

Pending the results of the *Trash Assessment Strategy* in evaluating control measures for full-capture equivalency and available City funds, FCDs may be installed in these TMAs as needed to reduce the trash generation rates. FCDs for these TMAs will be evaluated beginning in fiscal year 2017-2018.

3.2.6 Trash Management Area: Priority #10 (Map ID, C08-4)
Priority #11 (Map ID, C07-4)
Priority #12 (Map ID, C12-4)

TMAs C07-4, C08-4, and C12-4 are close in proximity and contain similar land uses therefore they are likely to receive the same, or similar, control measure enhancements. These TMAs are primarily residential areas with a low trash generation rate as well as parks, schools, and churches. In addition to the jurisdictional-wide control measures, specific control measures that may be implemented for these TMAs are described below.

Pre-MRP Actions (Prior to 2009)

Two FCDs were installed in TMA C12-4 in 2008 and 2009 on private property. Privately owned devices are required to be maintained by owners and are inspected on a routine basis, as required by MRP.

Post-MRP Actions (December 2009-July 1, 2014)

One FCD was installed in TMA C12-4 in 2010 on private property. Privately owned devices are required to be maintained by owners and are inspected on a routine basis, as required by MRP.

Planned Actions (July 2014-July 2022)

Although the City does not have jurisdiction over public schools the City may partner with schools for improved public litter container management (i.e. provision of containers), increased litter pickup at schools, and outreach programs such as the hauler required outreach described in Section 3.2.1. Partnerships with schools will begin 2014 with the implementation of the hauler agreement.

Enhanced street sweeping from once monthly to twice monthly, or possibly weekly, will likely be considered with a street sweeping changes made in adjacent TMAs to allow for a jurisdictional-wide change, otherwise street sweeping enhancements will be evaluated by 2017-2018. Street sweeping enhancements including improved access to the curb via “no parking” signs and red curbs may also be evaluated in fiscal year 2017-2018. Additional FCDs are not likely to be installed in these TMAs unless they are installed on a private development or future regulatory requirements for these areas to be treated by FCDs.

3.2.7 Creek and Shoreline Hot Spot Cleanups

Post-MRP Actions (December 2009-July 1, 2014)

As part of the WVCWP, the City of Campbell continues to sponsor regional, volunteer-based cleanups at a minimum of once annually in one of the four West Valley communities. Additionally, as required by the 2009 MRP and its 2012 Short-Term Plan, the City of Campbell adopted one trash hot spot at Los Gatos Creek near Creekside Way that is cleaned and assessed at least once annually with the assistance of WVCWP staff and volunteers. This trash hot spot is located in TMA C02-2b as shown in Figure 6. Trash Management Area Map for the City of Campbell. Adjacent land uses include the Los Gatos Creek Trail, PG&E substation, hotel and offices. Dominant types of trash removed from this hot spot include cigarette butts, convenience/fast food items, plastic bags, plastic products, paper and cardboard. The last three fiscal years of data for volumes of trash removed from this hot spot are presented in **Error! Reference source not found.**

Table 7. Volume of Trash Removed from Hot Spot (Two Annual Cleanups)

FY 2012-13 Volume of Trash Removed (cubic yards)	FY 2011-12 Volume of Trash Removed (cubic yards)	FY 2010-11 Volume of Trash Removed (cubic yards)
3.95	4.0	4.87

Planned Actions (July 2014-July 2022)

Beyond the Short-Term Plan reporting, the City will begin to assess the need for additional creek cleanup locations beginning in 2014 by performing annual creek walks of the creeks located in Campbell including Los Gatos Creek and San Tomas Aquino Creek. Creek that are located in or adjacent to TMAs C01-2b, C02-2b, C06-2c, C08-4, and C12-4. Creek walks will occur at major outfalls and along areas with public access. Creek walks will identify new problem areas, if any, as well as new reporting requirements when litter is observed. Problem areas will be documented via a WVCWP or City developed form and photographed. If a litter problem area is identified beyond the City's existing trash hot spot it will be inspected at least twice more within the year from the initial inspection to confirm a persistent litter problem is present.

Confirmed problem areas will be evaluated for the implementation of a new control measure which may include:

- regular monitoring and annual cleanups of the new trash hot spot by WVCWP or City staff,
- installation of a barrier (e.g., chain link fence or road block), if feasible,
- provision of a public litter container(s) (i.e. if on a trail),

or some other control measure deemed appropriate to reduce the amount of trash generated at problem sites.

3.2.8 Summary of Trash Control Measures

This section describes the control measures that the City of Campbell has or plans to implement to address trash problems and achieve a target of 100% trash reduction (i.e. "No Visual Impact") from their MS4 by July 1, 2022. The selection of control measures are described in detail in Section 3.2, above.

Trash Management Area Map ID: C10-1- (Priority #1)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Public Education and Outreach Programs

Trash Management Area Map ID: C05-2a- (Priority #2)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Single-Use Carryout Plastic Bag Policies
- Polystyrene Foam Food Service Ware Policies
- Public Education and Outreach Programs

Trash Management Area Map ID: C01-2b- (Priority #3)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Single-Use Carryout Plastic Bag Policies
- Public Education and Outreach Programs

Trash Management Area Map ID: C02-2b- (Priority #4)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Single-Use Carryout Plastic Bag Policies
- Public Education and Outreach Programs
- Volunteer Led Cleanups
- Hot Spot Cleanup

Trash Management Area Map ID: C03-2b- (Priority #5)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Single-Use Carryout Plastic Bag Policies
- Public Education and Outreach Programs
- Volunteer Led Cleanups

Trash Management Area Map ID: C04-2b- (Priority #6)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Single-Use Carryout Plastic Bag Policies (Consideration)
- Polystyrene Foam Food Service Ware Policies
- Public Education and Outreach Programs

Trash Management Area Map ID: C11-2b- (Priority #7)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement

- Improved Trash Bins/Container Management
- Single-Use Carryout Plastic Bag Policies
- Public Education and Outreach Programs

Trash Management Area Map ID: C09-2c- (Priority #8)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Public Education and Outreach Programs

Trash Management Area Map ID: C06-2c- (Priority #9)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Polystyrene Foam Food Service Ware Policies
- Public Education and Outreach Programs

Trash Management Area Map ID: C08-4- (Priority #10)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Public Education and Outreach Programs

Trash Management Area Map ID: C07-4- (Priority #11)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management

- Public Education and Outreach Programs

Trash Management Area Map ID: C12-4- (Priority #12)

- Full-Capture Treatment Devices
- Street Sweeping
- On-land Trash Cleanups
- Partial-Capture Treatment Devices
- Enhanced Storm Drain Inlet Maintenance
- Activities to Reduce Trash from Uncovered Loads
- Anti-littering and Illegal Dumping Enforcement
- Improved Trash Bins/Container Management
- Public Education and Outreach Programs
- Volunteer Led Cleanups

3.3 Control Measure Implementation Schedule

The timeline proposed in Table 8 is based on the City of Campbell's current evaluation of City funds and resources (i.e. City staff and programs). The timeline may be adjusted as the results of the *Trash Assessment Strategy* described in Section 4.0 are made available, which will further highlight the appropriate control measures to be implemented jurisdictional-wide and in each TMA to achieve FCD equivalency. Additionally, the City budget is difficult to predict for the duration of the Long-Term Plan as it is dependent on the fluctuating economy and the needs of other City programs. Therefore, control measure adoption will be strongly dependent on available funding each fiscal year. Any changes to the timeline or control measures to be adopted will be provided in the annual reporting process each fiscal year through 2022.

Table 8. City of Campbell trash control measure implementation schedule.

Trash Management Area and Control Measures	Pre-MRP	Short-Term					Long-Term							
		FY 2009-2010	FY 2010-2011	FY 2011-2012	FY 2012-2013	FY 2013-2014[a]	FY 2014-2015	FY 2015-2016	FY 2016-2017[b]	FY 2017-2018	FY 2018-2019	FY 2019-2020	FY 2020-2021	FY 2021-2022[c]
Jurisdiction-wide Control Measures														
Full-Capture Treatment Devices	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
On-land Trash Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Partial-Capture Treatment Devices							X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Activities to Reduce Trash from Uncovered Loads	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Anti-littering and Illegal Dumping Enforcement	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Improved Trash Bins/Container Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Single-Use Carryout Plastic Bag Policies			X	X	X	X	X	X	X	X	X	X	X	X
Polystyrene Foam Food Service Ware Policies							X	X	X	X	X	X	X	X
Public Education and Outreach Programs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #1: C10-1 (Enhancements over jurisdictional-wide control measures)														
Full-Capture Treatment Devices	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance		X	X	X	X	X	X	X	X	X	X	X	X	X
TMA #2: C05-2a (Enhancements over jurisdictional-wide control measures)														
Full-Capture Treatment Devices		X	X	X	X	X	X	X	X	X	X	X	X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance		X	X	X	X	X	X	X	X	X	X	X	X	X
Improved Trash Bins/Container Management	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Trash Management Area and Control Measures	Pre-MRP	Short-Term					Long-Term							
		FY 2009-2010	FY 2010-2011	FY 2011-2012	FY 2012-2013	FY 2013-2014[a]	FY 2014-2015	FY 2015-2016	FY 2016-2017[b]	FY 2017-2018	FY 2018-2019	FY 2019-2020	FY 2020-2021	FY 2021-2022[c]
TMAs #3, #4, and #5: C01-2b, C02-2b, C04-2b (Enhancements over jurisdictional-wide control measures)														
Full-Capture Treatment Devices				X	X	X	X	X	X	X	X	X	X	X
Street Sweeping		X	X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance		X	X	X	X	X	X	X	X	X	X	X	X	X
Improved Trash Bins/Container Management								X	X	X	X	X	X	X
On-land Trash Cleanups								X	X	X	X	X	X	X
TMAs #7, #8, and #9: C11-2b, C09-2c, and C06-2c (Enhancements over jurisdictional-wide control measures)														
Full-Capture Treatment Devices									X	X	X	X	X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance		X	X	X	X	X	X	X	X	X	X	X	X	X
Improved Trash Bins/Container Management								X	X	X	X	X	X	X
TMAs #10, #11, and #12: C08-4, C07-4, and C12-4 (Enhancements over jurisdictional-wide control measures)														
Full-Capture Treatment Devices	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Street Sweeping	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Enhanced Storm Drain Inlet Maintenance	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Public Education and Outreach Programs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Creek and Shoreline Hot Spot Cleanups														
Volunteer Led Cleanups	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hot Spot Cleanups		X	X	X	X	X	X	X	X	X	X	X	X	X
Creek Walks						X	X	X	X	X	X	X	X	X

[a] July 1, 2014 40% trash reduction target
[b] July 1, 2014 70% trash reduction target
[c] July 1, 2022 100% trash reduction target

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4.0 PROGRESS ASSESSMENT STRATEGY

Provision C.10.a.ii of the MRP requires Permittees to develop and implement a trash load reduction tracking method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction targets. Early into the MRP, Permittees decided to work collaboratively to develop a trash load reduction tracking method through the Bay Area Stormwater Management Agencies Association (BASMAA). Permittees, Water Board staff and other stakeholders assisted in developing Version 1.0 of the tracking method. On behalf of all MRP Permittees, the Bay Area Stormwater Management Agencies Association (BASMAA) submitted Version 1.0 to the Water Board on February 1, 2012.

The Trash Assessment Strategy (Strategy) described in this section is intended to serve as Version 2.0 of the trash tracking method and replace version 1.0 previously submitted to the Water Board. The Strategy is specific to Permittees participating in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), including the City of Campbell. The City intends to implement the Strategy in phases and at multiple geographical scales (i.e., jurisdiction-wide and trash management area) in collaboration with SCVURPPP. Pilot implementation is scheduled for the near-term and as assessment methods are tested and refined, the Strategy will be adapted into a longer-term approach. The Strategy selected by the City is described in the following sections.

4.1 SCVURPPP Pilot Assessment Strategy

The following SCVURPPP Pilot Trash Assessment Strategy (SCVURPPP Pilot Strategy) was developed by SCVURPPP on behalf of the City and other Santa Clara Valley Permittees. The SCVURPPP Pilot Strategy will be implemented at a pilot scale on a countywide basis and includes measurements and observations in the City of Campbell.

4.1.1 Management Questions

The Strategy is intended to answer the following core management questions over time as trash control measures outlined in Permittee Long-term Trash Management Plans are implemented and refined:

- Are the MS4 trash load reduction targets (i.e., 40%, 70%, and No Adverse Impacts) being achieved?
- Are there trash problems in receiving waters (e.g., creeks and rivers)?
- If trash problems in receiving waters exist, what are the important sources and transport pathways?

The SCVURPPP Pilot Strategy, including indicators and methods, is summarized in this section and fully described in the SCVURPPP Pilot Trash Assessment Strategy, a compendium document submitted to the Water Board on February 1, 2014 on behalf of all SCVURPPP Permittees (SCVURPPP 2014).

4.1.2 Indicators of Progress and Success

The management questions listed in the previous section will be addressed by tracking information and collecting data needed to report on a set of key environmental indicators. Environmental indicators are simple measures that communicate what is happening in the environment. Since trash in the environment is very complex, indicators provide a more practical

and economical way to track the state of the environment than if we attempted to record every possible variable.

With regard to municipal stormwater trash management, indicators are intended to detect progress towards trash load reduction targets and solving trash problems. Ideally, indicators should be robust and able to detect progress that is attributable to multiple types of trash control measure implementation scenarios. Assessment results should also provide Permittees with an adequate level of confidence that trash load reductions from MS4s have occurred, while also assessing whether trash problems in receiving waters have been resolved. Indicators must also be cost effective, relatively easy to generate, and understandable to stakeholders.

Primary and secondary indicators that SCVURPPP Permittees will use to answer core management questions include:

Primary Indicators:

1-A Reduction in the level of trash present on-land and available to MS4s
1-B Effective full capture device operation and maintenance

Secondary Indicators:

2-A Successful levels of trash control measures implementation
2-B Reductions in the amount of trash in receiving waters

In selecting the indicators above, the City of Campbell in collaboration with SCVURPPP and other SCVURPPP Permittees recognize that no one environmental indicator will provide the information necessary to effectively determine progress made in reducing trash discharged from MS4s and improvements in the level of trash in receiving waters. Multiple indicators were therefore selected.

The ultimate goal of municipal stormwater trash reduction strategies is to reduce the impacts of trash associated with MS4s on receiving waters. Indicators selected to assess progress towards this goal should ideally measure outcomes (e.g., reductions in trash discharged). The primary indicators selected by SCVURPPP are outcome-based and include those that are directly related to MS4 discharges. Secondary indicators are outcome or output-based and are intended to provide additional perspective on and evidence of, successful trash control measure implementation and improvements in receiving water condition with regard to trash.

As described in Section 2.2, trash is transported to receiving waters from pathways other than MS4s, which may confound our ability to observe MS4-associated reductions in creeks and shorelines. Due to this challenge of linking MS4 control measure implementation to receiving water conditions, the receiving water based indicator is currently considered a secondary indicator. Evaluations of data on the amount of trash in receiving waters that are conducted over time through the Pilot Assessment Strategy will assist the City in further determinations of the important sources and pathways causing problems in local creeks, rivers and shorelines.

4.1.3 Pilot Assessment Methods

This section briefly summarizes the preliminary assessment methods that the City of Campbell will implement through the SCVURPPP Pilot Strategy to generate indicator information described in the previous section. Additional information on each method can be found in the

SCVURPPP Pilot Trash Assessment Strategy submitted to the Water Board by SCVURPPP on behalf of the City.

1-A. On-land Visual Assessments

As part of the Trash Generation Map assessment and refinement process (see Section 2.3.1), a draft on-land visual assessment method was developed to assist Permittees in confirming and refining trash generating area designations (i.e., very high, high, moderate and low trash generating categories). The draft on-land visual assessment method is intended to be a cost-effective tool and provide Permittees with a viable alternative to quantifying the level of trash discharged from MS4s. As part of BASMAA's *Tracking California's Trash* grant received from the State Water Resources Control Board (see Section 4.2), quantitative relationships between trash loading from MS4s and on-land visual assessment condition categories will be established. Condition categories defined in the draft on-land assessment protocol are listed in Table 9

Table 9. Trash condition categories used in the draft on-land visual assessment protocol.

Trash Condition Category	Summary Definition
A (Low)	Effectively no trash is observed in the assessment area.
B (Moderate)	Predominantly free of trash except for a few pieces that are easily observed.
C (High)	Trash is widely/evenly distributed and/or small accumulations are visible on the street, sidewalks, or inlets.
D (Very High)	Trash is continuously seen throughout the assessment area, with large piles and a strong impression of lack of concern for litter in the area.

On-land visual assessments will be conducted in trash management areas within the City of Campbell as part of the SCVURPPP Pilot Trash Assessment Strategy. On-land assessments are intended to establish initial conditions and detect improvements in the level of trash available to MS4s over time. More specifically, on-land visual assessment methods will be conducted in areas not treated by trash full capture devices in an attempt to evaluate reductions associated with other types of control measures. Assessment methods for areas treated by full capture devices are described in this next section.

Given that the on-land assessment method and associated protocol have not been fully tested and refined, initial assessments will occur at a pilot scale in the City and in parallel to the *Tracking California's Trash* project. The frequency of assessments and number of sites where assessments will occur during the pilot stage are more fully described in the SCVURPPP Pilot Trash Assessment Strategy (SCVURPPP 2014).

1-B. Full Capture Operation and Maintenance Verification

Consistent with the MRP, adequate inspection and maintenance of trash full capture devices is required to maintain full capture designation by the Water Board. The City of Campbell is currently developing an operation and maintenance verification program (Trash O&M Verification Program), via SCVURPPP, to ensure that devices are inspected and maintained at a level that maintains this designation.

The SCVURPPP Trash O&M Verification Program will be modeled on the current O&M verification program for stormwater treatment controls implemented consistent with the Permit new and redevelopment requirements. Additional details regarding the Trash O&M Verification Program can be found in the SCVURPPP Pilot Trash Assessment Strategy (SCVURPPP 2014).

2-A. Control Measure Effectiveness Evaluations

In addition to on-land trash assessments and full capture operation and maintenance verification, the City will also conduct assessments of trash control measures implemented within their jurisdictional area. Assessment methods will be selected based on trash sources and the type of control measure being implemented. Control measure effectiveness evaluations are more fully described in the SCVURPPP Pilot Trash Assessment Strategy. The following are example assessment methods that may be used to demonstrate successful control measure implementation and progress towards trash reduction targets:

- Product-related Ordinances – Descriptions of outreach efforts, tracking and reporting business compliance rates, or other metrics of control measure performance.
- Street Sweeping- Identification sweeping frequency and the ability to sweep to the curb by primary TMA, including any enhancements that have been implemented; and any other metrics demonstrating the enhanced performance of street sweeping.
- Public/Private Trash Container Management - Descriptions of control measures implemented to prevent overflowing trash containers or promoting the more effective use of public/private bins, including any new or enhancements to existing actions; and any other metrics demonstrating the performance of the control measure.
- Public Outreach and Education – Descriptions of outreach and education actions specific to trash deduction, including the number of events conducted within the municipality; descriptions of effectiveness measurements, including the results of pre- and post-implementation surveys or other metrics.
- On-land Cleanups and Enforcement – Descriptions of on-land cleanup actions, including any enhancements that have been implemented; identification of whether on-land cleanup are Permittee or volunteer–led; or other metrics of control measure performance.
- Storm Drain Inlet Maintenance – Descriptions of the level of maintenance, including any enhancement to maintenance frequency; the numbers of inlets where enhanced maintenance is being implemented; and any other metrics demonstrating the performance of inlet maintenance.
- Anti-littering and Illegal Dumping Prevention/Enforcement - Descriptions of control measures implemented to prevent littering and illegal dumping, including any new or

enhancements to existing actions; descriptions and results of enhanced enforcement actions; and any other metrics demonstrating the performance of the control measure.

- Prevention of Uncovered Loads - Descriptions of control measures implemented to prevent trash dispersion from uncovered loads, including any new or enhancements to existing actions; descriptions and results of enhanced enforcement actions; and any other metrics demonstrating the performance of the control measure.
- Partial Capture Devices – Descriptions, numbers and types of devices implemented; maintenance frequencies by device or groups of devices; and any other metrics demonstrating the partial capture device performance.
- Other Control Measures:- Descriptions of control measures implemented to prevent or intercept trash before discharge to receiving waters, and any other metrics demonstrating the performance of the control measure

2-C. Receiving Water Condition Assessments

The ultimate goal of stormwater trash management in the Bay Area is to significantly reduce the amount of trash found in receiving waters. In the last decade, Santa Clara Valley Permittees and volunteers have collected data on the amounts of trash removed during cleanup events. More recently, Permittees have conducted trash assessments in creek and shoreline hotspots using standardized assessment methods. In an effort to answer the core management question *Have trash problems in receiving waters been resolved?,* the City of Campbell plans to continue conducting receiving water condition assessments at its trash hot spot a minimum of one time per year. Assessment will be conducted consistent with Permit hot spot cleanup and assessment requirements. Additional information on receiving water assessment methods can be found in the SCVURPPP Pilot Trash Assessment Strategy (SCVURPPP 2014).

4.2 BASMAA "Tracking California's Trash" Project

The SCVURPPP Pilot Assessment Strategy described in the previous section recognizes that outcome-based trash assessment methods needed to assess progress toward trash reduction targets are not well established by the scientific community. In an effort to address these information gaps associated with trash assessment methods, the Bay Area Stormwater Management Agencies Association (BASMAA), in collaboration with SCVURPPP, the 5 Gyres Institute, San Francisco Estuary Partnership, the City of Los Angeles, and other stormwater programs in the Bay Area, developed the *Tracking California's Trash* Project. The Project is funded through a Proposition 84 grant awarded to BASMAA by the State Water Resources Control Board (SWRCB) who recognized the need for standardized trash assessment methods that are robust and cost-effective.

The Project is intended to assist BASMAA member agencies in testing trash assessment and monitoring methods needed to evaluate trash levels in receiving waters, establish control measures that have an equivalent performance to trash full capture devices, and assess progress in trash reduction over time. The following sections provide brief descriptions of tasks that BASMAA will conduct via the three-year Project. Full descriptions of project scopes, deliverables, and outcomes will be developed as part of the task-specific Sampling and Analysis Plans required by the SWRCB during the beginning of the Project. The Project is currently underway and will continue through 2016.

4.2.1 Testing of Trash Monitoring Methods

BASMAA and the 5 Gyres Institute will evaluate the following two types of assessment methods as part of the Project:

- **Trash Flux Monitoring –** Trash flux monitoring is intended quantify the amount of trash flowing in receiving waters under varying hydrological conditions. Flux monitoring will be tested in up to four receiving water bodies in San Francisco Bay and/or the Los Angeles areas. Methods selected for evaluation and monitoring will be based on a literature review conducted during this task and through input from technical advisors and stakeholders. Monitoring is scheduled to begin in 2014 and will be completed in 2016.
- **On-land Visual Assessments –** As part of the Project, BASMAA will also conduct an evaluation of on-land visual assessment methods that are included in the SCVURPPP Pilot Assessment Strategy. The methods are designed to determine the level of trash on streets and public right-of-ways that may be transported to receiving waters via MS4s. BASMAA plans to conduct field work associated with the evaluation of on-land visual assessment at a number of sites throughout the region. To the extent practical, sites where the on-land methods evaluations take place will be coordinated with trash flux monitoring in receiving waters. On-land assessments will occur in areas that drain to trash full capture devices, and all sites will be assessed during wet and dry weather seasons in order to evaluate on-land methods during varying hydrologic conditions. Monitoring is scheduled to begin in 2014 and will be completed in 2016.

4.2.2 Full Capture Equivalent Studies

Through the implementation of BASMAA's *Tracking California's Trash* grant-funded project, a small set of "Full Capture Equivalent" projects will also be conducted in an attempt to demonstrate that specific combinations of control measures will reduce trash to a level equivalent to full capture devices. Initial BMP combinations include high-frequency street sweeping, and enhanced street sweeping with auto-retractable curb inlet screens. Other combinations will also be considered. Studies are scheduled to begin in 2014 and will be completed in 2016.

4.3 Additional Progress Assessments

The City of Campbell will continue to improve upon its already robust response rate program for reported litter and illegal dumping violations that are typically cleaned up in the same day or within 24 business hours by City staff. Funding and staff time permitting, the City will consider improvements to reporting response calls and monitoring for litter and illegal dumping hot spots that may require enhanced control measures such as outreach, physical barriers, and increased cleanups or monitoring.

4.4 Long-Term Assessment Strategy

The City of Campbell is committed to implementing standardized assessment methods post-2016 based on the lessons learned from pilot assessments and studies that will occur between 2014 and 2016. Assessment activities described in the previous sections will evaluate the utility of different assessment methods to demonstrate progress towards trash reduction targets and provide recommended approaches for long-term implementation. Lessons learned will be submitted to the Water Board with the FY 2015-2016 Annual Report and a revised Strategy will be developed and submitted, if necessary. The revised Strategy will include agreed upon

assessment methods that will be used to demonstrate progress during the remaining term of trash reduction requirements. Reporting using the new/revised methods will begin with the FY 2016-17 Annual Report.

4.5 Implementation Schedule

The implementation schedule for the SCVURPPP Pilot Implementation Strategy, BASMAA's Tracking California's Trash project, and the Long-Term Assessment Strategy are included in Table 10. Load reduction reporting milestones are also denoted in the table. The schedule is consistent with the need for near-term pilot assessment results to demonstrate progress toward short-term targets, while acknowledging the need for testing and evaluation of assessment methods and protocols prior to long-term implementation. For more detailed information on implementation timelines, refer to the SCVURPPP Pilot Trash Assessment Strategy (SCVURPPP 2014) and monitoring plans developed as part of BASMAA's Tracking California's Trash project.

Table 10. City of Campbell trash progress assessment implementation schedule.

Trash Assessment Programs and Methods	Prior to FY 2013-14	Fiscal Year								
		2013-14[a]	2014-15	2015-16	2016-17[b]	2017-18	2018-19	2019-20	2020-21	2021-22[c]
Pilot Trash Assessment Strategy (SCVURPPP)										
On-land Visual Assessments										
Initial (Baseline) Assessments	X									
Pilot Progress Assessments		X	X	X	X					
Full Capture Operation and Maintenance Verification			X	X	X					
Control Measure Effectiveness Evaluations	X	X	X	X	X					
Receiving Water Condition Assessments	X	X	X	X	X					
Tracking California's Trash Project (BASMAA)										
Testing of Trash Monitoring Methods										
Trash Flux Monitoring Protocol Testing			X	X	X					
On-land Visual Assessment Evaluations			X	X	X					
Full Capture Equivalent Studies			X	X	X					
Long-Term Trash Assessment Strategy (SCVURPPP)						X	X	X	X	X

[a] July 1, 2014 40% trash reduction target
[b] July 1, 2014 70% trash reduction target
[c] July 1, 2022 100% trash reduction target

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